DOCUMENT RESUME

ED 244 867 SO 015 654

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TITLE Attitudes and Performance in Guided-Design Training as a Function of Psychological Type.
PUB DATE 84
NOTE 15p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; Decision Making; Educational Research; *Group Behavior; Group Unity; Higher Education; Problem Solving; *Psychological Characteristics; *Psychology; *Student Attitudes; Student Behavior; *Student Characteristics; Student Motivation
IDENTIFIERS *Guided Design; Myers Briggs Type Indicator

ABSTRACT

The impact of individual characteristics on the attitudes and performance of students in a college psychology course using the guided design approach was examined. With this teaching method students work in groups to solve problems, gaining experience in the cognitive processes of concept reorganization, symbolic translation, data interpretation, and prognostication and in presenting and defending their ideas. Subjects consisted of 44 male and 41 female students enrolled in a general psychology course. Scores on the intuitive, feeling, sensing, and thinking dimensions of the Myers-Brigg Type Indicator, Form G, were used to divide students into three groups: sensing/thinking types, intuitive/feeling types, and mixed group. After completing the guided design project, students answered questionnaires. A group proficiency score was generated by comparing the groups' decisions with a preferred decision or ranking. Results include the following. The homogeneous groups performed better than the mixed group. The sensing/thinking types responded most favorably to guided-design activities. Only the sensing/thinking group tended to want to spend more time in guided-design activities. (RM)

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Attitudes and Performance in Guided-Design Training as a Function of Psychological Type

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1984

SP 015 654

Running head: GUIDED DESIGN

Abstract

The purpose of the present study was an examination of personality type and group composition as they related to attitudes about guided-design training and performance on a guided-design project. It was hypothesized that groups composed of all Sensing/Thinking and all Intuitive/Feeling types, as opposed to groups composed of both types, would be less effective in solving guided-design problems, but would express more satisfaction with the guided-design approach, and would feel more cohesive with other members of their guided-design group. It was also hypothesized that Sensing/Thinking types would reveal the strongest preference for the problem-solving requirements of the guided-design technique. Finally, it was hypothesized that all groups would reveal a stronger preference for the guided-design method when they worked in cohesive groups. The results revealed a statistically-significant trend consistent with the hypothesis that Sensing/Thinking types would respond most favorably to guided-design activities. In addition, the results revealed a statistically-significiant, positive correlation between cohesiveness and preferences for guided-design activities for the Sensing/Thinking groups, only. It was concluded that Sensing/Thinking people are willing to devote more of their class time to guided-design

activities, and they are especially favorably disposed toward the guided-design technique when they work in cohesive groups.

Attitudes and Performance in Guided-Design Training as a Function of Psychological Type

The guided-design approach to instruction and training was developed by Wales and Stager(1977) for the purpose of training students to be conscious and socially realistic problem solvers. This strategy prescribes a decision-making model which provides the student with experiences in the cognitive processes of concept reorganization, symbolic translation, data interpretation, and prognostication. Furthermore, this training in problem solving occurs in a group setting, thus providing the trainee with experience in presenting and defending his or her ideas (Miller, 1981a).

Although several process and outcome studies have helped clarify the psychological dimensions of the guided-design technique (Miller, 1981b, 1981c, 1981d; Miller et. el., 1983; Tseng & Wales, 1972), no research has investigated the impact individual characteristics have on attitudes and performance in this training situation. It has been shown, however, that groups with a mixture of personality types performed better than homogeneous groups when working on a similar problem-solving task (Blaylock, 1983). On the other hand, Blaylock reported that members with an intuitive personality orientation were inclined to become disinterested in

the structured, problem-solving task used in his study.

Because nothing has been published concerning the role individual differences might play in the guided-design process, users of this procedure have no way of predicting when the technique will be most effective or determining how guided-design groups should be composed for maximum training effectiveness. The present study was developed for the purpose of overcoming some of the limitations faced by users of the guided-design approach. More specifically, the Myers-Briggs Type Indicator was used in an attempt to construct satisfying and productive guided-design groups. It was hypothesized that groups composed of all Sensing/Thinking and all Intuitive/Feeling types, as opposed to groups composed of a mixture of the two types, would be less effective in solving guided-design problems, but would express more satisfaction with the guided-design approach, and would feel more cohesive with other members of their guided-design team (Carskadon, 1979; Sherman, 1981). Furthermore, it was hypothesized that Sensing/Thinking types, who prefer working with facts through impersonal analysis,[1] would reveal the highest satisfaction with the analytical, problem-solving activities required of the guided-design technique. Finally, it was hypothesized that all type would respond more favorably to the guided-design activities if they worked in cohesive groups.

Method

Subjects

Subjects consisted of 44 male and 41 female students enrolled in the General Psychology course at MSU. Scores on a previously administered Myers-Brigg Type Indicator, Form G, were used as criteria for participation in the study. Individuals who had a score of 15 or above on both the Intuitive dimension and Feeling dimension (NF) and those with a score of 15 or above on both the Sensing and Thinking dimensions (ST) participated in the study.

The subjects were divided into three major groups. The first two groups consisted of subjects who were similar on the N/F (36 subjects) or S/T dimension (21 subjects). The third group of 28 individuals consisted of both N/F and S/T types. Each of these three experimental groups was divided into smaller groups, with no fewer than three and no more than five individuals participating in each group.

Materials

The guided-design project tested in this experiment appears in the Wales and Stager (1977) book. This project is called the Fishing Trip and requires no specialized knowledge for an adequate solution.

A satisfaction scale was constructed and tested in a pilot study for use as one of the dependent variables. The final version

of the scale consisted of five items concerning the value of guided design vs. lecture approaches in preparing students for careers and graduate school, and in providing for maximum effort expenditure and optimal learning experiences. Each question was followed by a six point scale anchored with the words disagree and agree. A sixth question asked the subjects to specify the percentage of time they thought should be devoted to guided-design activities in a typical class.

A second questionnaire consisted of eight statements taken from Hemphill's Index of Group Dimensions (Miller, 1977). The statements, both positive and negative, were used for the purpose of assessing the work group's level of cohesiveness. Those statements selected concerned subjects perceptions regarding freedom of expression, participation level of the membership, level of cooperation of the membership, interpersonal tension expressed by the membership, and the amount of laughter that took place during the meeting. Each statement was accompanied by a five point scale anchored with the words disagree and agree.

Procedure

Subjects were told they were participating in a study concerned with the guided-design approach to training. Furthermore, they were told the Fishing Trip project, on which they would be working, was an example of the guided-design approach.

After the orientation instructions were completed, the subjects worked, in a group, until they had completed all the tasks involved in the project. Then, as individuals, they were asked to complete the questionnaires described above. In addition to the questionnaire measures, each group was measured in terms of the time needed to complete the guided-design task and time needed to rank the items (according to importance for survival) discussed in the project. Finally, a group proficiency score was generated by comparing the group's decision (ranking of the items according to importance for survival) with a preferred decision or ranking.

Results

The independent variable investigated in this study was group composition (Intuitive/Feeling; Sensing/Thinking; and Mixed Group). The dependent variables were time to complete project, time to rank items, group proficiency, group cohesiveness, guided-design or lecture preferences, and apportionment of time for guided-design and lecture activities.

The analysis of variance revealed no significant differences in the time required to complete the project ($F = 1.37$; $df = 2,19$), time to rank items ($F = .34$; $df = 2,9$), group proficiency ($F = .82$; $df = 2,19$), group cohesiveness ($F = .63$; $df = 2,74$), and guided-design preferences ($F = .38$; $df = 2,82$). However, an examination of the means for the time to complete project variable (mixed = 52 minutes; NF = 57.4 minutes; ST = 59.6 minutes) and the group proficiency variable (mixed = 47.64; NF = 37.03) revealed a tendency for the mixed group to spend less time on the project and to perform less well than the homogeneous groups. In addition, statistical analysis of the apportionment variable revealed a significant trend ($F = 2.55$; $df = 2,81$; $p < .085$). The means for this variable were 37.14% for the N/F group, 48% for the S/T group, and 40% for the mixed group.

Finally, correlations were calculated to determine the relationship between group cohesiveness and attitudes about guided-design and lecture approaches. The Pearson r for the N/F group of - .35 (df = 19) was not significant at .05 level, and the Pearson r of - .006 (df = 26) for the mixed group was not statistically significant. However, the Pearson r of .45 (N = 34) for the S/T group was statistically significant at the .01 level.

Discussion

An examination of the statistical results revealed group differences on one measure of satisfaction. Specifically, it was learned that homogeneous groups composed Sensing/Thinking types were inclined to recommend that instructors devote one half of a course to guided-design activities, while Intuitive/Feeling groups recommended reserving only about one-third of any course for these same activities.

In addition, the correlations between group cohesiveness and preferences for the guided-design approach demonstrated that Sensing/Thinking groups had a clear preference for guided-design activities when working in a group with which they felt cohesive. Although this finding is inconsistent with the view that Thinking types can get along without harmony (Myers, 1976), it is

consistent with earlier research which revealed a tendency for people to prefer guided-design, group activities when they liked their fellow members (Miller, 1981b). The fact that the Instuitive/Feeling group did not reveal this same directional tendency is difficult to explain, however, Perhaps these types, finding themselves in a cohesive group, were alerted to the dangers inherent in trying to learn in a situation with an atmosphere that was too friendly. That is, they may have recognized that their ability to relate well to most people might actually interfere with learning and, therefore, block the attainment of important, educational goals (Miller, 1981d).

Conclusions

In conclusion, Sensing/Thinking types were willing to devote the largest amount of class time to the analytical, problem-solving activities involved in guided-design training. Furthermore, if the conclusions of Blaylock (1983) are correct, the differences between Sensing/Thinking and Intuitive/Feeling types might be expected to grow once the novelty of the technique began to dwindle for the Intuitive/Feeling types. Finally, Sensing/Thinking types tended to want to spend more time in guided-design activities when they felt close to their fellow workers, while Intuitive/Feeling types did not reveal this same tendency.

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Footnotes

Sensing/Thinking types are interested in facts which can be collected and verified directly by the senses, and which can be examined logically. Intuitive/Feeling types are interested in possibilities not facts and tend to make decisions based on their feelings rather than logic. See Gifts Differing by Isabel Briggs Myers. It is available from consulting Psychologists Press, 577 College Avenue, Palo Alto, California. 94306.